

**Part II:** This proposal coordinates with proposed revisions to the IECC-C regarding appropriate consideration of multiple layers of insulation within a given insulation component and also clarifies that different insulation components (e.g., cavity insulation & continuous insulation) R-values cannot be summed because the mathematical result will not result in equivalent thermal performance due to cavity insulation components being interrupted by framing and continuous insulation not interrupted by framing.

**CE61-19: Tables C402.1.3 and C402.1.4 were cut off in the Committee Action Hearing Agenda**

## CE61-19

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**Revise as follows:**

*(Portions of table not shown remain unchanged)*

**TABLE C402.1.3  
OPAQUE THERMAL ENVELOPE INSULATION COMPONENT MINIMUM REQUIREMENTS, R-VALUE METHOD<sup>a, i</sup>**

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
Metal buildings <sup>b</sup>	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-19 + R-11 LS	R-25 + R-11 LS	<del>R-25</del> <del>+ R-11</del> <del>LS</del>  R-30 + R-11 LS	R-30 + R-11 LS	R-30 + R-11 LS	<del>R-30</del> <del>+ R-11</del> <del>LS</del>  R-25 + R-11 LS	<del>R-30</del> <del>+ R-11</del> <del>LS</del>  R-25 + R-11 LS
Attic and other	R-38	R-38	R-38	R-38	R-38	R-38	<del>R-38</del> R-49	<del>R-38</del> R-49	<del>R-38</del> R-49	R-49	R-49	R-49	<del>R-49</del> R-60	<del>R-49</del> R-60	<del>R-49</del> R-60	<del>R-49</del> R-60

For SI: 1 inch = 25.4 mm, 1 pound per square foot = 4.88 kg/m<sup>2</sup>, 1 pound per cubic foot = 16 kg/m<sup>3</sup>.  
ci = Continuous insulation, NR = No Requirement, LS = Liner System.

- Assembly descriptions can be found in ANSI/ASHRAE/IESNA Appendix A.
- Where using R-value compliance method, a thermal spacer block shall be provided, otherwise use the U-factor compliance method in Table C402.1.4.
- R-5.7ci is allowed to be substituted with concrete block walls complying with ASTM C90, ungrouted or partially grouted at 32 inches or less on center vertically and 48 inches or less on center horizontally, with ungrouted cores filled with materials having a maximum thermal conductivity of 0.44 Btu-in/h-f<sup>2</sup> °F.
- Where heated slabs are below grade, below-grade walls shall comply with the exterior insulation requirements for heated slabs.
- “Mass floors” shall be in accordance with Section C402.2.3.

- f. Steel floor joist systems shall be insulated to R-38.
- g. "Mass walls" shall be in accordance with Section C402.2.2.
- h. The first value is for perimeter insulation and the second value is for slab insulation. Perimeter insulation is not required to extend below the bottom of the slab.
- i. Not applicable to garage doors. See Table C402.1.4.

(Portions of table not shown remain unchanged)

**TABLE C402.1.4**  
**OPAQUE THERMAL ENVELOPE ASSEMBLY MAXIMUM REQUIREMENTS, U-FACTOR**  
**METHOD<sup>a, b</sup>**

CLIMATE ZONE	1		2		3		4 EXCEPT MARINE		5 AND MARINE 4		6		7		8	
	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R	All other	Group R
Metal buildings	<del>U-</del> 0.044  <u>U-</u> 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.035	U- 0.031	U- <del>0.031</del>  <u>U-</u> 0.029	U- 0.029	U- 0.029	<del>U-</del> 0.029  <u>U-</u> 0.026	<del>U-</del> 0.029  <u>U-</u> 0.026
Attic and other	U- 0.027	U- 0.027	U- 0.027	U- 0.027	U- 0.027	U- 0.027	<del>U-</del> 0.027  <u>U-</u> 0.021	<del>U-</del> 0.027  <u>U-</u> 0.021	<del>U-</del> 0.027  <u>U-</u> 0.021	U- 0.021	U- 0.021	U- 0.021	<del>U-</del> 0.021  <u>U-</u> 0.017	<del>U-</del> 0.021  <u>U-</u> 0.017	<del>U-</del> 0.021  <u>U-</u> 0.017	<del>U-</del> 0.021  <u>U-</u> 0.017

For SI: 1 pound per square foot = 4.88 kg/m<sup>2</sup>, 1 pound per cubic foot = 16 kg/m<sup>3</sup>.  
ci = Continuous insulation, NR = No Requirement, LS = Liner System.

- a. Where assembly *U*-factors, *C*-factors, and *F*-factors are established in ANSI/ASHRAE/IESNA 90.1 Appendix A, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table, and provided that the construction, excluding the cladding system on walls, complies with the appropriate construction details from ANSI/ASHRAE/ISNEA 90.1 Appendix A.
- b. Where *U*-factors have been established by testing in accordance with ASTM C1363, such opaque assemblies shall be a compliance alternative where those values meet the criteria of this table. The *R*-value of continuous insulation shall be permitted to be added to or subtracted from the original tested design.
- c. Where heated slabs are below grade, below-grade walls shall comply with the *U*-factor requirements for above-grade mass walls.
- d. "Mass floors" shall be in accordance with Section C402.2.3.
- e. These *C*-, *F*- and *U*-factors are based on assemblies that are not required to contain insulation.
- f. The first value is for perimeter insulation and the second value is for full slab insulation.
- g. "Mass walls" shall be in accordance with Section C402.2.2.